

A Variety Of Biomedical Careers Panel Discussion

The Boston University's Broadening Experience in Scientific Training (BU's BEST) program provides opportunities for doctoral and post-doctoral trainees to enable their professional development and to expose them to the host of career paths available to them with a PhD in the biomedical sciences. On April 10, 2024, BU's BEST held a panel discussion hosting BU alumni working in a variety of biomedical careers. The panelists included: Dr. Bethany Hannafon; Assistant Professor, Department of Obstetrics and Gynecology, Section of Gynecologic Oncology, University of Oklahoma Health Sciences Center (OUHSC); Dr. Ariana Harris; Associate Patent Attorney, Foley Hoag LLP; Dr. Diane Lebo; Patent Agent, Lathrop GPM LLP; Dr. Kiana Mahdavian; Associate Director/Translational Research Program, Boston Medical Center; Dr. Emily Nelson; Senior Scientist, Bernhard Nocht Institute for Tropical Medicine. Dr. Barbara Schreiber, Associate Professor of Biochemistry & Cell Biology, Boston University Chobanian & Avedisian School of Medicine hosted the panel.

Dr. Schreiber began by asking the panelists about their career paths. Dr. Bethany Hannafon received her PhD from the Cell and Molecular Biology and Molecular Medicine program under the direction of Dr. Carol Rosenberg and then completed postdoctoral research fellowships at the Dana Farber Cancer Institute and OUHSC. Dr. Hannafon began her academic career at OUHSC, where she served as a Research Assistant Professor for 5 years before transitioning to a consecutive track, followed by a tenure-track Assistant Professor position. Her current goals include achieving tenure within the next five years. Dr. Ariana Harris received her PhD from the Molecular Medicine program under the direction of Dr. Monty Montano and started her law career as a technology specialist at Nelson Mullins Riley & Scarborough LLP. She then earned a JD at Suffolk University Law School. She is currently an Associate Patent Attorney at the Foley Hoag LLP and is planning to become a partner with her current law firm. Dr. Diane Lebo received her PhD under the direction of Dr. Kim McCall in 2022. She started her career in law as a technical specialist, passed the patent bar and is currently working as both a patent agent and a mother of two. She is considering furthering her education by attending law school. Dr. Kiana Mahdavian received her PhD from the Nutrition and Metabolism program in 2016, under the direction of Drs. Orian Shirahai and Barbara Corkey. Following a short postdoctoral position to complete unfinished PhD projects, she worked as a senior scientist at the Flagship VentureLabs. In 2018, Dr. Mahdavian transitioned to a leadership position focused on translational/clinical studies at Boston Medical Center and is now an Associate Director with the Hematology and Oncology Translational Research Program. Dr. Emily Nelson received her PhD from the Microbiology program under the direction of Dr. Elke Muhlburger and completed a four-year postdoctoral position in Hamburg, Germany. She then transitioned to a Senior Scientist position in virology, managing a European mobile laboratory. Dr. Nelson's goals include leveraging extensive networking to start working for the World Health Organization (WHO) in a position focused on public health.

The discussion continued with the panelists recommending skills that the new generation of PhD trainees should master. Dr. Hannafon believes in acquiring diverse skills during training, including but not limited to *in-vitro* techniques, *in-vivo* techniques, clinical specimen handling, and grant writing. Additionally, trainees should prioritize improving their professional development skills, leadership, managerial skills, and financial and budget management, which are often overlooked during a PhD or postdoc. Dr. Lebo emphasized the importance of both reading and writing skills, as well as technical work. To address specific needs for a career in law, Dr. Lebo suggested gaining the ability to act candidly and professionally, especially in high-stakes patent law. In law, there are firm hourly work requirements which necessitate adaption to a fast-paced environment. Dr. Harris reflected on having to learn every skill in patent law from scratch. She believes communication skills for different audiences, the ability to adapt and to provide mentorship, and task management are critical for a successful career in patent law. Dr. Mahdavian agreed with the other panelists regarding the importance of soft skills, including but not limited to communication, management, and multitasking. She highlighted the importance of having a high-quality mentor. Dr. Nelson provided valuable insights as a scientist with a career outside the US and highlighted the importance of having international collaborations, language skills, and the capacity to adapt to new work cultures.

Dr. Schreiber then asked the panelists what they look for when hiring. Dr. Harris reflected on her personal experiences when hiring individuals; she often asks herself the question; "Can I train and mentor this person?" It typically takes approximately a year to train someone who has just finished graduate school. Dr. Harris further emphasized the importance of having the ability to articulate thoughts, learn new experiments, handle project switches, and deal with difficult people when demands are high. She therefore often seeks out candidates who have worked in the service industry, since they tend to have many well-developed soft skills. She suggested candidates show excitement and interest, perhaps by highlighting an internship. Critical questions trainees should ask themselves include whether there's a good personality fit and whether they have the energy for this career. Dr. Harris stated the importance of showing personality while maintaining professionalism. Be true to yourself and who you are, because if not, you're not going to get hired into the right group. Dr. Lebo believes having a

diversity of knowledge is essential. While pursuing your PhD, trainees become experts in a niche subsection of a field. She recommends branching out by attending scientific talks and absorbing knowledge in every area of science. Moreover, she advises developing strong communication skills, acting professionally, securing informational interviews with potential employers, and "having a coffee" with someone already working in a desired field. Dr. Hannafon reflected on her experiences as a PI. The ability of lab members to effectively work together determines the success of the lab. To achieve this culture, good communication skills are vital. Members of her team must communicate effectively and take criticism constructively. As a hiring manager, Dr. Mahdaviani has selected some candidates for interviews by looking at their experience levels and communication skills. A balance of technical expertise and the ability to work well in a team is important. Dr. Nelson reiterated the need for new hires to demonstrate flexibility and creativity.

The panelists were asked if they would change anything given the option to start their journeys all over again. Dr. Lebo said she might be a bit bolder by not shying away from various opportunities. Dr. Hannafon said she would seek out more mentors and advocates for various aspects of her career development, such as those who could advise her on how to balance managing her career and raising children. Dr. Harris stressed that she would have kept in touch with those from her PhD and law school training. She emphasized the long-term importance of networking. Dr. Mahdaviani echoed this sentiment. Finally, Dr. Nelson discussed avoiding burn out by prioritizing mental health while in training.

Lastly, the panelists discussed work-life balance in their careers. Dr. Nelson described the holiday policies in Europe, which emphasize work-life balance more than US policies. She has struggled with balancing her priorities and is trying to manage her time more in a way that better reflects her values. Dr. Hannafon spoke about raising three children; both she and her husband have demanding jobs, so moving back to Oklahoma enabled her extended family support system to help. Dr. Mahdaviani said she has a good balance in her academic role, with the ability to work from home at times. Dr. Lebo spoke of her own burn out and recommends seeking professional help if needed. Dr. Harris mentioned that in a law career, certain hourly requirements must be met to make long-term progress. She also mentioned that law careers have notoriously poor cultures of work-life balance. However, she does not mind this style of working since she does not have children, although many of her colleagues do have children and have managed a work-life balance.

The panelists provided the audience with great insights on a host of biomedical careers and lots of food for thought as the trainees decide on career paths. We want to thank all of the panelists!

Summary by PhD students, Bahar Bakhshi, Jillian Grassia and Madeline Labott